Comparisons of Job Characteristics

Focus Occupation: Chemical Technicians (19-4031)
Associated Occupation: Geological and Petroleum Technicians (19-4041)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 75

Focus Occupation: Chemical Technicians (19-4031)
Associated Occupation: Geological and Petroleum Technicians (19-4041)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Mathematics	9.2	14.8	14.6	0	Current knowledge level may be sufficient
Computers and Electronics	8.4	14.4	14.7	0	Current knowledge level may be sufficient
Engineering and Technology	5.7	12.0	10.2	<	Expanded education and/or training may be required
Geography	3.9	11.6	1.7	<<	Extensive education and/or training may be required
Physics	4.3	11.2	9.6	<	Expanded education and/or training may be required
Chemistry	4.8	10.7	18.6	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 90

Focus Occupation: Chemical Technicians (19-4031)
Associated Occupation: Geological and Petroleum Technicians (19-4041)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Science	4.5	9.8	13.8	>>	Skill level is likely more than sufficient
Mathematics	6.2	7.8	9.4	>	Skill level is likely sufficient
Troubleshooting	4.5	6.1	6.9	>	Skill level is likely sufficient
Equipment Selection	3.3	4.7	7.1	>>	Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 94

Focus Occupation: Chemical Technicians (19-4031)
Associated Occupation: Geological and Petroleum Technicians (19-4041)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Written Comprehension	11.0	13.0	13.5	0	Current ability level may be sufficient
Oral Comprehension	12.5	12.6	12.2	0	Current ability level may be sufficient
Oral Expression	12.4	12.3	11.2	0	Current ability level may be sufficient
Near Vision	11.1	11.1	12.9	>	Current ability level is likely sufficient
Inductive Reasoning	10.2	10.7	12.8	>	Current ability level is likely sufficient
Information Ordering	9.9	10.7	12.0	>	Current ability level is likely sufficient
Written Expression	9.8	10.7	12.0	>	Current ability level is likely sufficient
Deductive Reasoning	10.6	10.4	12.8	>	Current ability level is likely sufficient
Category Flexibility	9.0	10.3	11.6	>	Current ability level is likely sufficient
Flexibility of Closure	7.8	9.9	8.4	<	Some improvement in abilities may be required
Mathematical Reasoning	6.3	8.4	8.8	0	Current ability level may be sufficient
Number Facility	6.3	8.4	8.6	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 92

Focus Occupation: Chemical Technicians (19-4031)
Associated Occupation: Geological and Petroleum Technicians (19-4041)

Work Activities	Exclusivity of Activity
Adhere to safety procedures	12
Analyze chemical experimental, test, or analysis data or findings	69
Analyze scientific research data or investigative findings	27
Collect scientific or technical data	30
Collect statistical data	47
Communicate technical information	4
Compile numerical or statistical data	38
Conduct analyses to determine physical properties of materials	80
Conduct laboratory research or experiments	57
Conduct standardized qualitative laboratory analyses	62
Conduct standardized quantitative laboratory analyses	62
Develop or maintain databases	30

Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Explain complex mathematical information	30
Follow safe waste disposal procedures	50
Maintain established procedures concerning quality assurance	87
Maintain laboratory or field equipment	87
Maintain records, reports, or files	5
Measure, weigh, or count products or materials	17
Prepare reports	8
Prepare sample for laboratory testing, analysis, or microscopy	74
Record test results, test procedures, or inspection data	48
Set up or calibrate laboratory equipment	78
Understand properties of gases or liquids	78
Use chemical testing or analysis procedures	54
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use knowledge of metric system	39
Use laboratory equipment	60
Use mathematical or statistical methods to identify or analyze problems	30
Use microscope	71
Use oral or written communication techniques	1
Use physical science research techniques	68
Use precision measuring tools or equipment	17
Use quality assurance techniques	61
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 84

Focus Occupation: Chemical Technicians (19-4031)
Associated Occupation: Geological and Petroleum Technicians (19-4041)

Tools and Technologies	Exclusivity
Business function specific software	1
Calculating machines and accessories	3
Chemical evaluation instruments and supplies	10
Chromatographic measuring instruments and accessories	16
Computers	1
Content authoring and editing software	1
Crucibles	90

Data management and query software	1
Electrochemical measuring instruments and accessories	9
Gas analyzers and monitors	10
General laboratory glassware and plasticware and supplies	13
Geophysical and geotechnical instruments	23
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory boring and grinding and cutting and crushing and pressing equipment	27
Laboratory decanting and distilling and evaporating and extracting equipment and supplies	19
Laboratory mixing and stirring and shaking equipment and supplies	19
Laboratory ovens and accessories	15
Laboratory pumps and tubing	23
Liquid and solid and elemental analyzers	19
Pipettes and liquid handling equipment and supplies	16
Spectroscopic equipment	10
Temperature and heat measuring instruments	6
Viewing and observing instruments and accessories	4
Water treatment and supply equipment	21
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.